



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,832	01/17/2002	Yong-Jun Kim	401461	5906
23548	7590	04/27/2005	EXAMINER	
LEYDIG VOIT & MAYER, LTD 700 THIRTEENTH ST. NW SUITE 300 WASHINGTON, DC 20005-3960			DONG, DALEI	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.	Applicant(s)	
10/046,832	KIM ET AL.	
Examiner	Art Unit	
Dalei Dong	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12 and 14-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12 and 14-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 18, 2005 has been entered.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Plasma Display Panel Having Auxiliary Partition Walls with Different Thickness.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2879

4. Claims 12 and 14-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,373,195 to Whang in view of U.S. Patent No. 6,498,430 to Sakai.

Regarding to claim 12, Whang discloses in Figures 3, 11 and 12, a plasma display panel comprising: a rear substrate (21); a front substrate (22) spaced from the rear substrate and forming a discharge space between the rear and front substrates; partition walls (30 and 31) between the front and rear substrate and including continuous main partition walls (30<sub>1</sub>, 30<sub>2</sub>, 30<sub>3</sub>, ...) parallel to each other, having the same width, and arranged in stripes spaced from each other, and auxiliary partition walls (31<sub>1</sub>, 31<sub>2</sub>, 31<sub>3</sub>, 31<sub>4</sub>, 31<sub>5</sub>, ...) transverse to and connected to respective pairs of the main partition walls, each auxiliary partition wall having a uniform width and respective pairs of the auxiliary partition walls defining and surrounding respective red, green, and blue discharge cells having coatings of respective fluorescent substance (23, 26 and 28) respectively producing red, green, and blue light, wherein the discharge cells have respective areas differing in accordance with ratios of efficiencies of light radiation by the respective fluorescent substances (as shown in Figure 12 and see column 8, lines 42-56); and address electrodes (29) on the rear substrate and parallel to the auxiliary partition walls, all of the auxiliary partition walls being disposed directly opposite a corresponding address electrode (shown in Figures 11 and 12), and pairs of first and second electrodes (33<sub>1</sub> and 33<sub>2</sub>) disposed on respective pairs of main partition walls and extending in a direction crossing the address electrodes.

However, Whang does not disclose wherein different auxiliary partition walls having respective, different widths and the varying areas of the discharge cells being

determined by respective widths of respective pairs of the auxiliary partition walls defining respective discharge cells.

The Sakai reference teaches in Figures 1 and 5, a plasma display panel having different auxiliary partition walls having respective, different widths and the discharge cells have respective areas differing in accordance with ratios of efficiencies of light radiation by the respective fluorescent substances and the varying areas of the discharge cells being determined by respective widths of respective pairs of the auxiliary partition walls defining respective discharge cells (see column 3, line 62 to column 4, line 17) for the purpose of producing different colors having uniform maximum luminance to display natural full-color images wherein each fluorescent substance for each color may emit substantially the same luminous flux of light.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have construct the auxiliary partition walls of Whang with varied width in accordance with ratios of efficiencies of Sakai in order to produce different colors having uniform maximum luminance to display natural full-color images wherein each fluorescent substance for each color may emit substantially the same luminous flux of light.

Regarding to claim 14, Sakai teaches the areas of discharge cells are inversely proportional to the ratio of efficiencies of light radiation of the respective fluorescent substances of red, green, and blue discharge cells (see column 4, lines 24-37) and the motivation to combine is the same as above.

Regarding to claim 15, Sakai teaches the blue discharge cell has a larger area than the areas of the red and green discharge cells (see column 4, lines 24-37) and the motivation to combine is the same as above.

Regarding to claim 16, Whang discloses in Figure 3, the first and second electrodes (33<sub>1</sub> and 33<sub>2</sub>) do not cover the discharge cells, and including first, second, and third transparent electrodes (32<sub>1</sub>, 32<sub>2</sub> and 32<sub>3</sub>) extending from the first and second electrodes over at least parts of the red, green and blue discharge cells respectively (see column 4, lines 5-20).

Regarding to claim 17, Whang discloses in Figure 13, the area of the first and second and third electrodes differ in accordance with the ratios of efficiencies of light radiation by the respective fluorescent substances of the red, green, and blue discharge cells where the first, second, and third transparent electrodes are respectively disposed (see column 9, lines 8-21).

Regarding to claim 18, Whang discloses in Figure 13, the areas of the first, second and third transparent electrodes are inversely proportional to the ratios of efficiencies of light radiation of the respective fluorescent substances of the red, green and blue discharge cells.

Regarding to claim 19, Whang discloses in Figure 13, the area of the third transparent electrode disposed partially over the blue discharge cell is larger than the areas of the first and second transparent electrodes.

Regarding to claim 20, Whang discloses in Figure 13, the areas of the first, second, and third transparent electrodes are in a ratio of 0.82:0.91:1; however, Whang does not specifically disclose the areas of the first, second, and third transparent electrodes are in a ratio of 0.65-0.7:0.9:1. The Examiner asserts that it would have been obvious to one having ordinary skill in the art at the time the invention was made to have adjust the area of each electrode in accordance to the desired color and application, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Regarding to claim 21, Whang discloses in Figure 3, a plasma display panel comprising: a rear substrate (21); a front substrate (22) spaced from the rear substrate and forming a discharge space between the rear and front substrates; partitions walls (30 and 31) between the front and rear substrates and including continuous main partition walls (30<sub>1</sub>, 30<sub>2</sub>, 30<sub>3</sub>, ...) parallel to each other, having the same width, and arranged in stripes spaced from each other, and auxiliary partition wall portions (31<sub>1</sub>, 31<sub>2</sub>, 31<sub>3</sub>, 31<sub>4</sub>, 31<sub>5</sub>, ...) transverse to and connected to respective pairs of the main partition walls, the auxiliary wall portions being parallel and arranged in a staggered pattern so that at least one pair of auxiliary wall portions connected to opposite sides of one of the main partition walls are

not aligned, each auxiliary partition wall portion having a uniform width, and respective pairs of the auxiliary partition walls defining and surrounding respective red, green, and blue discharge cells having coatings of respective fluorescent substance respectively producing red, green, and blue light, wherein the discharge cells have respective areas differing in accordance with ratios of efficiencies of light radiation by the respective fluorescent substances (as shown in Figure 12 and see column 8, lines 42-56); and address electrodes (29) on the rear substrate and parallel to the auxiliary partition walls, all of the auxiliary partition walls being disposed directly opposite a corresponding address electrode, and pairs of first and second electrodes (33<sub>1</sub> and 33<sub>2</sub>) disposed on respective pairs of main partition walls and extending in a direction crossing the address electrodes.

However, Whang does not disclose wherein different auxiliary partition walls having respective and the varying areas of the discharge cells being determined by respective widths of respective pairs of the auxiliary partition walls defining respective discharge cells.

The Sakai reference teaches in Figures 1 and 5, a plasma display panel having different auxiliary partition walls having respective, different widths and the discharge cells have respective areas differing in accordance with ratios of efficiencies of light radiation by the respective fluorescent substances, the varying areas of the discharge cells being determined by respective widths of respective pairs of the auxiliary partition walls defining respective discharge cells (see column 3, line 62 to column 4, line 17) for the purpose of producing different colors having uniform maximum luminance to display



Art Unit: 2879


natural full-color images wherein each fluorescent substance for each color may emit substantially the same luminous flux of light.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have construct the auxiliary partition walls of Whang with varied width in accordance with ratios of efficiencies of Sakai in order to produce different colors having uniform maximum luminance to display natural full-color images wherein each fluorescent substance for each color may emit substantially the same luminous flux of light.

Regarding to claim 22, Sakai teaches the areas of discharge cells are inversely proportional to the ratio of efficiencies of light radiation of the respective fluorescent substances of red, green, and blue discharge cells (see column 4, lines 24-37) and the motivation to combine is the same as above.

Regarding to claim 23, Sakai teaches the blue discharge cell has a larger area than the areas of the red and green discharge cells (see column 4, lines 24-37) and the motivation to combine is the same as above.

Regarding to claim 24, Whang discloses in Figure 3, the first and second electrodes (33<sub>1</sub> and 33<sub>2</sub>) do not cover the discharge cells, and including first, second, and third transparent electrodes (32<sub>1</sub>, 32<sub>2</sub> and 32<sub>3</sub>) extending from the first and second



electrodes over at least parts of the red, green and blue discharge cells respectively (see column 4, lines 5-20).

Regarding to claim 25, Whang discloses in Figure 13, the area of the first and second and third electrodes differ in accordance with the ratios of efficiencies of light radiation by the respective fluorescent substances of the red, green, and blue discharge cells where the first, second, and third transparent electrodes are respectively disposed (see column 9, lines 8-21).

Regarding to claim 26, Whang discloses in Figure 13, the areas of the first, second and third transparent electrodes are inversely proportional to the ratios of efficiencies of light radiation of the respective fluorescent substances of the red, green and blue discharge cells.

Regarding to claim 27, Whang discloses in Figure 13, the area of the third transparent electrode disposed partially over the blue discharge cell is larger than the areas of the first and second transparent electrodes.

Regarding to claim 28, Whang discloses in Figure 13, the areas of the first, second, and third transparent electrodes are in a ratio of 0.82:0.91:1; however, Whang does not specifically disclose the areas of the first, second, and third transparent electrodes are in a ratio of 0.65-0.7:0.9:1. The Examiner asserts that it would have been

obvious to one having ordinary skill in the art at the time the invention was made to have adjust the area of each electrode in accordance to the desired color and application, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Regarding to claim 29, Whang discloses in Figure 11, the address electrodes (A1-A9) are arranged on the rear substrate at a uniform interval (see column 7, lines 41-65).

Regarding to claim 30, Whang discloses in Figure 11, the address electrodes (A1-A9) are arranged on the rear substrate at a uniform interval (see column 7, lines 41-65).

### ***Response to Arguments***

5. Applicant's arguments filed February 18, 2005 have been fully considered but they are not persuasive.

In response to Applicant's argument that the prior art of record fails to teach or suggest the address electrodes to be opposite any partition walls as in the structures defined by the claimed invention. The Examiner asserts that the Whang reference clearly shown in Figures 11 and 12, all of auxiliary partition walls are being disposed directly opposite a corresponding address electrodes (A1-A9) and thus the Examiner asserts that the prior art of record teaches the claimed invention and maintains the rejection.

Also, in response to Applicant's argument that the Sakai reference does not include sufficient disclosure to supply the claimed arrangement of main partition walls of uniform width and auxiliary partition walls of varying widths. The Examiner asserts that the Whang reference clearly discloses in Figure 12, adjusting the placement of the auxiliary partition walls (and not the main partition wall) in accordance to the efficiencies of light radiation by the respective fluorescent substance (see column 8, lines 24-56). The Sakai reference teaches in Figure 1, to adjust the thickness of the partition wall in accordance to the efficiencies of the light radiation by the respective fluorescent substance. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have construct the auxiliary partition walls of Whang with varied width in accordance with ratios of efficiencies of Sakai in order to produce different colors having uniform maximum luminance to display natural full-color images wherein each fluorescent substance for each color may emit substantially the same luminous flux of light. Thus, the Examiner asserts that the prior art of record provide sufficient disclosure to supply the claimed arrangement and maintains the rejection.

Further, in response to Applicant's argument that the combination of the Whang reference and the Sakai reference would render the device inoperable and the address electrodes of Sakai would conflict with the address electrode of the Whang reference. The Examiner asserts that the Whang reference is the primary reference and is being modified by the Sakai reference. The Examiner merely proposed to construct the auxiliary partition walls of the Whang reference with different width partition wall of the Sakai reference. The address electrode of Sakai reference and its placement is nowhere

mentioned in the modification of the Whang reference as proposed by the Examiner. The Examiner asserts that the Whang reference clearly shown in Figure 11, the auxiliary partition wall are disposed directly opposite a corresponding address electrode while the respective discharge cells have the same size. However, the Whang reference further address the need of adjusting the size of the discharge cell by moving the auxiliary partition wall. The Examiner asserts that by having different thickness of the auxiliary partition wall of the Sakai reference for the Whang reference in order to adjust for the various size of the discharge cell area would render moving the auxiliary partition wall in the Whang reference unnecessary and thus the moving of the address electrode shown in Figure 12 will also be unnecessary. Thus, the Examiner asserts that combination of the Whang reference and the Sakai reference would result in a plasma display device having address electrodes uniformed spaced from each other with auxiliary partition wall with different thickness disposed directly opposite a corresponding address electrode. Therefore, the Examiner asserts that the combination of the prior art of record is valid and maintains the rejection.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (571)272-2370. The examiner can normally be reached on 8 A.M. to 5 P.M..

Art Unit: 2879

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571)272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



D.D.

April 20, 2005



Joseph Williams  
Primary Examiner  
Art Unit 2879